

What is claimed is:

1. An image forming apparatus to form an image in a photosensitive material by projecting an image recorded in an image carrying medium after irradiating projection light emitted from a light source to the image in said image carrying medium, said image forming apparatus comprising:

10 a photoelectric converting member for generating electricity by converting projection light which does not reach said photosensitive material.

2. An image forming apparatus as claimed in claim 1, further comprising:

15 a shutter member, arranged on a projecting optical axis that extends from said light source to said photosensitive material, for blocking said projection light traveling toward said photosensitive material; and

20 a shutter opening member for separating said shutter member from said projecting optical axis while said image is formed in said photosensitive material, said photoelectric converting member being attached on a surface of the light source side of said shutter member.

25 3. An image forming apparatus as claimed in claim 1, further comprising:

a light-quality adjusting section for adjusting a color balance of said projection light from said light source; and  
a light diffusing section, arranged between said

light-quality adjusting section and said image carrying medium, for diffusing said projection light, said photoelectric converting member being arranged in a position to cover a gap between said light-quality adjusting section and said light diffusing section.

4. An image forming apparatus as claimed in claim 1, further comprising:

10 a light diffusing section, arranged between said light source and said image carrying medium, for diffusing said projection light;

15 a feeding device for holding and feeding said image carrying medium, said photoelectric converting member being arranged in a position to cover a gap between said light diffusing section and said feeding device.

5. An image forming apparatus as claimed in claim 1, further comprising:

20 a light-quality adjusting section for adjusting said color balance of said projection light from said light source, wherein said light-quality adjusting section comprising:

plural color balance filters for changing intensity of component light of each color of said projection light; and a housing for containing said plural color balance filters, 25 said photoelectric converting member is attached on an inner surface of said housing.

6. An image forming apparatus as claimed in claim 1, said

image carrying medium is a photographic film.

7. An image forming apparatus as claimed in claim 1, further comprising:

5 a charger connected to said photoelectric converting member for charging the electricity generated by said photoelectric converting member, the electricity in said charger being supplied to said image forming apparatus.

10 8. An image forming apparatus as claimed in claim 1, further comprising:

a reflection control member for reflecting said projection light and for converting an optical axis of said projection light to a first optical axis passing through said image carrying medium  
15 or a second optical axis which does not pass through said image carrying medium, said photoelectric converting member being disposed on said second optical axis.

9. An image forming apparatus as claimed in claim 8, wherein  
20 said reflection control member is a digital micro-mirror device in which plural micromirrors are arranged in a matrix.

10. An image forming apparatus as claimed in claim 8, wherein  
25 said photoelectric converting member is tilted with respect to said second optical axis, and prevents said projection light reflected by said photoelectric converting member from returning to said reflection control member.

11. An image scanning apparatus to generate image data corresponding to an image recorded in an image carrying medium by converting projection light photoelectrically in an image reading device after irradiating said projection light from a 5 light source to said image in said image carrying medium and then projecting said image to said image reading device, said image scanning apparatus comprising:

a photoelectric converting member for generating electricity by converting photoelectrically projection light 10 which does not reach said image reading device.

12. An image scanning apparatus as claimed in claim 11, further comprising:

a shutter member, arranged on a projecting optical axis 15 that extends from said light source to said image reading device, for blocking said projection light traveling toward said image reading device; and

a shutter opening member separating said shutter member from said projecting optical axis while said projection light 20 is irradiated to said image reading device, said photoelectric converting member being attached on a surface of the light source side of said shutter member.

13. An image scanning apparatus as claimed in claim 11, 25 further comprising:

a light correcting section having plural balance filters to correct said projection light from said light source according to the type of said image carrying medium; and

a light diffusing section, arranged between said light correcting section and said image carrying medium, for diffusing said projection light, said photoelectric converting member being arranged in a position to cover a gap generated between 5 said light correcting section and said light diffusing section.

14. An image scanning apparatus as claimed in claim 11, further comprising:

a light diffusing section, arranged between said light 10 source and said image carrying medium, for diffusing said projection light; and

a feeding device for holding and feeding said image carrying medium, said photoelectric converting member being arranged in a position to cover a gap between said light diffusing 15 section and said feeding device.

15. An image scanning apparatus as claimed in claim 11, further comprising:

a light correcting section for correcting said projection 20 light from said light source according to the type of said image carrying medium, wherein said light correcting section comprising:

plural balance filters provided for each of said image carrying medium; and

25 a housing for containing said plural balance filters, said photoelectric converting member is attached on an inner surface of said housing.

16. An image scanning apparatus as claimed in claim 11,  
said image carrying medium is a photographic film.

17. An image scanning apparatus as claimed in claim 11,  
5 further comprising:

a charger, connected to said photoelectric converting member, for charging the electricity generated by said photoelectric converting member, the electricity in said charger being supplied to said image scanning apparatus.

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18. An image forming apparatus forming an image in a photosensitive material by projecting an image recorded in a photographic film to said photosensitive material after irradiating projection light from a light source to said image 15 in said photographic film, said image forming apparatus comprising:

a light-quality adjusting section for adjusting a color balance of said projection light from said light source;

20 a light diffusing section, arranged between said light-quality adjusting section and said photographic film, for diffusing said projection light;

a feeding device for holding and carrying said photographic film;

25 a shutter member, arranged on a projecting optical axis that extends from said light source to said photosensitive material, for blocking said projection light traveling toward said photosensitive material; and

a photoelectric converting member being provided in at

least one of a surface of the light source side of said shutter member, a position to cover a gap between said light-quality adjusting section and said light diffusing section, a position to cover a gap between said light diffusing section and said 5 feeding device and an inside of said light-quality adjusting section, said photoelectric converting member generating electricity by converting photoelectrically projection light which does not reach said photosensitive material.

10           19. An image scanning apparatus generating image data of an image recorded in a photographic film by projecting said image in said photographic film to an imaging device after irradiating projection light from a light source to said image, said image scanning apparatus comprising:

15           a light correcting section having plural balance filters to correct said projection light from said light source according to the type of said photographic film;

20           a light diffusing section, arranged between said light correcting section and said photographic film, for diffusing said projection light;

              a feeding device for holding and feeding said photographic film;

25           a shutter member, arranged on a projecting optical axis that extends from said light source to said imaging device, for blocking said projection light traveling toward said imaging device; and

              a photoelectric converting member being provided in at least one of a surface of the light source side of said shutter

member, a position to cover a gap between said light correcting section and said light diffusing section, a position to cover a gap between said light diffusing section and said feeding device and an inside of said light correcting section, and said 5 photoelectric converting member generating electricity by converting photoelectrically projection light which does not reach said imaging device.

20. An image forming apparatus forming an image in a 10 photosensitive material by projecting an image recorded in a photographic film to said photosensitive material after irradiating projection light from a light source to said image in said photographic film, said image forming apparatus comprising:

15 a digital micro-mirror device in which plural micromirrors are arranged in a matrix for converting an optical axis of said projection light to either a first optical axis passing through said photographic film or a second optical axis which does not pass through said photographic film; and

20 a photoelectric converting member, arranged on said second optical axis, for generating electricity by converting photoelectrically said projection light which does not pass through said photographic film.